

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named

Inventor : Mu Li

Appln. No.: 10/662,502

Filed : September 15, 2003

For : UNSUPERVISED TRAINING FOR
OVERLAPPING AMBIGUITY
RESOLUTION FOR CHINESE WORD
SEGMENTATION

Docket No.: M61.12-0527

Group Art Unit: 2626

Examiner: Serrou, Abdelali

RESPONSE AFTER FINAL

Filed Electronically March 9, 2009

Sir:

This is responsive to an Office Action mailed on December 8, 2008. The Office Action rejected claims 1-12 and 14-31. The application currently includes claims 1-12 and 14-31. No amendments have been made in this response.

Applicant respectfully submits that independent claims 1, 14 and 25, as well as their dependent claims are allowable over the cited prior art. Each of the independent claims relates to utilizing at least one context feature comprising a Chinese character to determine probability information for each of two possible segmentations. There simply is no teaching or suggestion that would lead one of ordinary skill in the art to combine the Chen reference with the Brockett reference.

The Chen reference explicitly discloses utilizing either a forward/backward matching segmenter or a statistical stack search segmenter. Each of these methods are exclusive from each other in the Chen patent.

Utilizing the forward/backward matching method, word boundaries are located by forming the longest words which exist in the lexicon (i.e., the longest allowable word), in both forward and backward manners. A statistical language model is utilized then to make a decision when there is any output discrepancies between the forward and backward matching. Applicant

submits that probabilities are based upon the statistical probability of a word being utilized in the Chinese language.

The Chen patent, having established rules for forward/backward segmenting, would not need to utilize context of the phrases to determine a probability because the probabilities have already been established independent of context. There is no disclosure of using at least one context feature comprising a Chinese character to determine the probability of whether one segmentation is more likely compared to an alternative segmentation. Therefore, Applicant respectfully submits that a set of rules is established with respect to utilizing forward/backward searching in the Chen patent.

Further, Applicant respectfully submits that the reason alleged for the combination is improper. The Office Action states it would have been obvious to one of ordinary skill in the art at the time of the invention to combine overlapping ambiguity string recognizer of Brockett to the text segmentation system of Chen because Brockett suggests this would be better identified the right segment among the competing segments.

First, Applicant would like to submit that the Brockett reference is a secondary reference and the disclosure of the secondary reference should not be utilized to allege a reason for the combination. The primary reference, the Chen reference, has already disclosed a forward/backward word segmenter for determining which segments to select, which is based upon a statistical word probability, exclusive from context. Therefore, Applicant respectfully submits that the Office Action is using the present invention as a guide to rejected the claims which is improper.

Further, Applicant submits that even assuming for the sake of argument that the combination is correct, the Brockett patent does not disclose utilizing context in a sentence to determine probabilities. Rather, Brockett discloses the use of tries to determine all of the possibilities of these characters in forming words. Each of these words is then given a value and if the combined characters are not part of the sentence then the combination is removed from the analysis. The combination of characters with the highest probability is then assigned to the sentence. There simply is no disclosure of using context including at least one Chinese character to determine the probability of combination of character segments would be most probable.

As such, Applicant respectfully submits that the present invention including claims

1-12 and 14-31 are allowable over the prior art. Reconsideration and allowance of claims 1-12 and 14-31 are respectfully requested.

The foregoing remarks are intended to assist the Office in examining the application and in the course of explanation may employ shortened or more specific or variant descriptions of some of the claim language. Such descriptions are not intended to limit the scope of the claims; the actual claim language should be considered in each case. Furthermore, the remarks are not to be considered exhaustive of the facets of the invention which are rendered patentable, being only examples of certain advantageous features and differences, which applicant's attorney chooses to mention at this time. For the foregoing reasons, applicant reserves the right to submit additional evidence showing the distinction between applicant's invention to be unobvious in view of the prior art.

Furthermore, in commenting on the references and in order to facilitate a better understanding of the differences that are expressed in the claims, certain details of distinction between the same and the present invention have been mentioned, even though such differences do not appear in all of the claims. It is not intended by mentioning any such unclaimed distinctions to create any implied limitations in the claims.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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